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DICTIONARY FILE UPDATES: 14 AUG 2008 HIGHEST RN 1041071-62-8

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=> d que stat l6
L3 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE
L4 STR



NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 2

August 15, 2008

10/717,646

2

STEREO ATTRIBUTES: NONE

L6 4026 SEA FILE=REGISTRY SSS FUL L3 AND L4

100.0% PROCESSED 67669 ITERATIONS

4026 ANSWERS

SEARCH TIME: 00.00.01

=> d his

(FILE 'HOME' ENTERED AT 13:14:57 ON 15 AUG 2008)

FILE 'HCAPLUS' ENTERED AT 13:15:08 ON 15 AUG 2008

E US20040101759/PN

L1 2 S E3

SEL RN

FILE 'REGISTRY' ENTERED AT 13:15:43 ON 15 AUG 2008

L2 20 S E1-20

FILE 'LREGISTRY' ENTERED AT 13:21:37 ON 15 AUG 2008

L3 STR

L4 STR

FILE 'REGISTRY' ENTERED AT 13:22:22 ON 15 AUG 2008

L5 50 S L3 AND L4

L6 4026 S L3 AND L4 FUL

L7 6 S L2 AND L6

SAV L6 WEI646/A

FILE 'HCAPLUS' ENTERED AT 13:23:33 ON 15 AUG 2008

L8 QUE BATTERY

L9 QUE ELECTROD? OR ANODE

L10 139 S L6(L)L8-9

L11 QUE ELECTROLY?

L12 154 S L6(L)L11

L13 QUE AMORPHOUS?

L14 7 S (L10 OR L12) AND L13

FILE 'REGISTRY' ENTERED AT 13:31:24 ON 15 AUG 2008

FILE 'HCAPLUS' ENTERED AT 13:31:30 ON 15 AUG 2008

L15 3 S L7

L16 3 S L15 NOT L14

=> fil hcap

FILE 'HCAPLUS' ENTERED AT 13:31:30 ON 15 AUG 2008

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FILE COVERS 1907 - 15 Aug 2008 VOL 149 ISS 8

FILE LAST UPDATED: 14 Aug 2008 (20080814/ED)

HCAPLUS now includes complete International Patent Classification (IPC) reclassification data for the second quarter of 2008.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d ibib abs hitstr hitind 114 1-7

L14 ANSWER 1 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2007:650382 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 147:221735

TITLE: Simple and effective way to improve the stability of titanium based boron doped diamond film electrode

AUTHOR(S): Guo, Liang; Chen, Guohua

CORPORATE SOURCE: School of Engineering, Hong Kong University of Science and Technology, Kowloon, Hong Kong, Peop. Rep. China

SOURCE: Materials Research Society Symposium Proceedings (2007), 956(Diamond Electronics--Fundamentals to Applications), 105-111
CODEN: MRSFPH; ISSN: 0272-9172

PUBLISHER: Materials Research Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB B-doped diamond film coated Ti (Ti/BDD) becomes increasingly attractive because of the combined properties of these 2 unique materials. The challenge for the composite material is the stability especially when it is used as an electrode. To meet this challenge, 2 temperature staged hot filament CVD method was employed. The accelerated working life time was significantly increased to 804 h for the 2-temperature electrode, compared with 244 h for the diamond film electrode fabricated under one temperature stage method. With the characterization of micro-Raman, XRD, and cross-sectional SEM, a multilayer of Ti/TiC/(diamond+amorphous C)/diamond can be found in the 2-temperature sample and the structure of Ti/TiC/diamond in the 1-temperature sample. There was less void space observed in the interlayer of 2-temperature sample. The multilayered compact structure plays an important role in improving the adhesion of diamond film to the Ti substrate which in turn increases the electrode working life time by over 3 times.

IT 121-43-7, Trimethyl borate

RL: RCT (Reactant); RACT (Reactant or reagent)

(B-doped diamond electrode fabrication on Ti by two-temperature stage modified hot filament CVD using hydrogen and methane and tri-Me borate and dimethoxymethane for improved electrode stability)

RN 121-43-7 HCAPLUS

CN Boric acid (H3BO3), trimethyl ester (CA INDEX NAME)

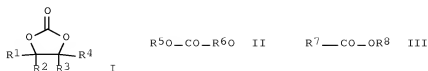


CC 72-2 (Electrochemistry)
 Section cross-reference(s): 66, 75
 IT 109-87-5, Dimethoxymethane 121-43-7, Trimethyl borate
 1333-74-0, Hydrogen, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (B-doped diamond electrode fabrication on Ti by
 two-temperature stage modified hot filament CVD using hydrogen and
 methane and tri-Me borate and dimethoxymethane for improved
 electrode stability)
 IT 7440-44-0, Carbon, uses
 RL: FMU (Formation, unclassified); TEM (Technical or engineered
 material use); FORM (Formation, nonpreparative); USES (Uses)
 (amorphous; formation in B-doped diamond electrode
 fabrication on Ti by two-temperature stage modified hot filament CVD
 using hydrogen and methane and tri-Me borate and dimethoxymethane
 for improved electrode stability)
 REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

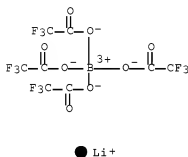
L14 ANSWER 2 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2006:601541 HCAPLUS Full-text
 DOCUMENT NUMBER: 145:86502
 TITLE: Secondary lithium battery
 INVENTOR(S): Arai, Toshikazu; Kobayashi, Mitsuru
 PATENT ASSIGNEE(S): Shin-Kobe Electric Machinery Co., Ltd., Japan
 SOURCE: Jpn. Kokai Tokyo Koho, 17 pp.
 CODEN: JKXXAF
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006164860	A	20060622	JP 2004-357502	20041210
US 20060154149	A1	20060713	US 2005-296277	20051208
PRIORITY APPLN. INFO.:			JP 2004-357502	A 20041210

OTHER SOURCE(S): MARPAT 145:86502
 GI



- AB The battery has a separator between a Li-intercalating cathode and a Li-intercalating anode and an organic electrolyte solution in a batter case; where the electrolyte solution containing a cyclic carbonate solvent I (R1-4 = H, F, Cl, Cl-3 alkyl, or fluorinated alkyl group), a linear carbonate II (R5-6 = H, F, Cl, Cl-3 alkyl, or fluorinated alkyl group), and a linear ester solvent III (R7-8 = H, F, Cl, Cl-3 alkyl, or fluorinated alkyl group).
- IT 412030-34-3, Lithium tetrakis(trifluoroacetoxy) borate
 RL: MOA (Modifier or additive use); USES (Uses)
 (electrolyte solns. containing carbonates and linear esters
 in solvents for secondary lithium batteries)
- RN 412030-34-3 HCAPLUS
- CN Borate(1-), tetrakis(2,2,2-trifluoroacetato-kO)-, lithium
 (1:1) (CA INDEX NAME)



- CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
- IT 7440-44-0, Carbotron P, uses
 RL: DEV (Device component use); USES (Uses)
 (amorphous; electrolyte solns. containing carbonates and
 linear esters in solvents for secondary lithium batteries)
- IT 105-37-3, Ethyl propionate 141-78-6, Ethyl acetate, uses
 554-12-1, Methyl propionate 872-36-6, Vinylene carbonate
 3967-54-2 4427-89-8 4427-96-7, Vinyl ethylene carbonate
 74123-20-9, Trifluoromethyl acetate 167951-80-6
 412030-34-3, Lithium tetrakis(trifluoroacetoxy) borate
 RL: MOA (Modifier or additive use); USES (Uses)
 (electrolyte solns. containing carbonates and linear esters
 in solvents for secondary lithium batteries)
- L14 ANSWER 3 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN
- ACCESSION NUMBER: 2006:77298 HCAPLUS Full-text
- DOCUMENT NUMBER: 144:153448
- TITLE: Electrode for secondary polymer electrolyte
 battery and the battery
- INVENTOR(S): Okumura, Takefumi; Nishimura, Shin; Iwayasu,
 Norio; Yokoyama, Shoichi; Itoh, Tetsuya; Yabe,
 Takeshi; Ichimiya, Kengo

August 15, 2008

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PATENT ASSIGNEE(S): Hitachi, Ltd., Japan; NOF Corporation
 SOURCE: PCT Int. Appl., 44 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: Japanese
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006009284	A1	20060126	WO 2005-JP13671	20050720
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM US 20070287070 A1 20071213 US 2007-572335				
PRIORITY APPLN. INFO.:				20070119
			JP 2004-211412	A 20040720
			WO 2005-JP13671	W 20050720

AB The battery has a cathode containing a cation-intercalating cathode active mass, an anode containing a cation-intercalating anode active mass, and an electrolyte layer interposed between the cathode and the anode and composed of an ion-conductive polymer for transferring the cations; where the cathode and/or the anode comprises a B-cong. organic compound as a binder component; and the cathode and/or anode active mass is treated with silane, Al, or Ti for facilitating intercalation/decalation of cations, thereby suppressing decrease in charge/discharge capacity.

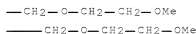
IT 30989-05-0 866555-98-8
 RL: DEV (Device component use); USES (Uses)
 (electrodes having boron-containing organic compound binders and modified active mass for secondary lithium batteries)

RN 30989-05-0 HCAPLUS

CN Ethanol, 2-[2-(2-methoxyethoxy)ethoxy]-, 1,1',1''-triester with boric acid (H3BO3) (CA INDEX NAME)

PAGE 1-A

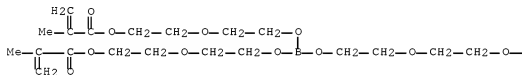




PAGE 1-B

RN 866555-98-8 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, 16-methyl-7-[(2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]ethoxy)ethoxy]-15-oxo-3,6,8,11,14-pentaoxa-7-boraheptadec-16-en-1-yl ester (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 IT 7440-44-0, Carbon, uses
 RL: DEV (Device component use); USES (Uses)
 (amorphous; electrodes having boron-containing organic compound binders and modified active mass for secondary lithium batteries)
 IT 9003-11-6, Ethylene oxide-propylene oxide copolymer 12057-17-9,
 Lithium manganese oxide (LiMn2O4) 14283-07-9, Lithium
 tetrafluoroborate 30989-05-0 90076-65-6 132843-44-8
 866555-98-8
 RL: DEV (Device component use); USES (Uses)
 (electrodes having boron-containing organic compound binders and modified active mass for secondary lithium batteries)
 REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE
 FOR THIS RECORD. ALL CITATIONS AVAILABLE
 IN THE RE FORMAT

L14 ANSWER 4 OF 7 HCAPLUS COPYRIGHT 2008 ACS ON STN
 ACCESSION NUMBER: 2001:334555 HCAPLUS Full-text
 DOCUMENT NUMBER: 135:124786
 TITLE: Effect of additions of organic sulfonates on
 the conductivity of lithium conducting polymer
 electrolytes
 AUTHOR(S): Bakenov, Zhumabay; Ikuta, Hiromasa; Wakiyara,
 Masataka
 CORPORATE SOURCE: Department of Applied Chemistry, Graduate School
 of Science and Engineering, Tokyo Institute of
 Technology, Ookayama, Meguro-ku, Tokyo,
 152-8552, Japan

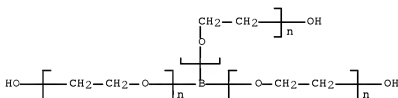
SOURCE: Electrochemistry (Tokyo, Japan) (2001), 69(5), 312-313
CODEN: EECTFA; ISSN: 1344-3542
PUBLISHER: Electrochemical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The electrochem. properties of the solid polymer electrolytes (SPE) containing lithium trifluoromethanesulfon imide (LiTFSI) and novel lithium sulfonates have been investigated. Sulfonates as additives into the LiTFSI-based SPE showed ionic conductivities up to 5.1×10^{-4} S/cm at room temperature. Improvement of the ionic conductivity is attributed to the formation of the coordination centers in the system and an increase of amorphous degree of the SPE.

IT 64631-20-5, Polyethylene glycol boric acid ester
RL: DEV (Device component use); USES (Uses)
(effect of addns. of organic sulfonates on the conductivity of lithium conducting polymer electrolytes)

RN 64631-20-5 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), $\alpha, \alpha', \alpha''$ -boryldynetriss[θ -hydroxy- (CA INDEX NAME)]



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 72, 76

IT 25322-68-3, Polyethylene glycol 53469-29-7, Lithium dodecylsulfonate 64631-20-5, Polyethylene glycol boric acid ester 82113-65-3 158454-23-0, Persoft 350679-87-7
RL: DEV (Device component use); USES (Uses)
(effect of addns. of organic sulfonates on the conductivity of lithium conducting polymer electrolytes)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 5 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1999:194152 HCAPLUS Full-text
DOCUMENT NUMBER: 130:204268
TITLE: Preparation of weakly coordinating anions containing polyfluoroalkoxide ligands for use as salt-in-polymer electrolytes

INVENTOR(S): Strauss, Steven H.; Nolan, Benjamin G.; Barbarich, Thomas J.; Rockwell, Justin J.

PATENT ASSIGNEE(S): Colorado State University Research Foundation, USA

SOURCE: PCT Int. Appl., 47 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9912938	A1	19990318	WO 1998-US19268	19980911
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2302559	A1	19990318	CA 1998-2302559	19980911
AU 9893928	A	19990329	AU 1998-93928	19980911
EP 1025110	A1	20000809	EP 1998-947054	19980911
EP 1025110	B1	20041222		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
US 6221941	B1	20010424	US 1998-151852	19980911
JP 2001515908	T	20010925	JP 2000-510745	19980911
AT 285413	T	20050115	AT 1998-947054	19980911
PRIORITY APPLN. INFO.:			US 1997-58524P	P 19970911
			WO 1998-US19268	W 19980911

OTHER SOURCE(S): MARPAT 130:204268

AB A compound comprising a polyfluorinated anion of the formula: [M1(XC(CFa(R1)b)(CFc(R2)d)R3)m(R4)n]p (M1 = transition metal or Group III, IV or V element; p = 1 or 2; X = O, S, NR5R6; R1 and R2 are independently H, C1-C4 alkyl, C4-C20 aryl; R4 is independently C1-C10 alkyl, C1-C10 alkoxide or C4-C20 aryloxy; R5 and R6 are independently H or C1-C10 alkyl; each of a and c are independently an integer from 0-3; a + b = 3; c + d = 3; m is an integer from 2-8; n is an integer from 0-4; at least one of a or c is not 0) and the use thereof, especially as electrolytes for batteries, is provided. Specifically, the present invention provides a compound comprising an anion which comprises a polyfluorinated alkoxide coordinated to a transition metal, or a Group III, IV or V element. Thus, LiNb(HFIP)6 (HFIP = 1,1,1,3,3,3-hexafluoro-2-propanol anion) was prepared in 79% yield from Li(HFIP) and reacted with amorphous polyethylene oxide (aPEO) to give a salt-in-polymer

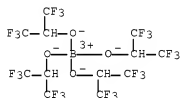
electrolyte for which glass transition temps. were determined and elec. conductivity measurements were made.

IT 220836-34-0P 220836-39-5P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(preparation and use in preparation of salt-in-polymer electrolytes)

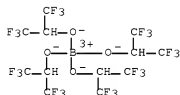
RN 220836-34-0 HCAPLUS

CN Borate(1-), tetrakis(1,1,1,3,3,3-hexafluoro-2-propanolato-κO)-, lithium (9CI) (CA INDEX NAME)



RN 220836-39-5 HCAPLUS

CN Borate(1-), tetrakis(1,1,1,3,3,3-hexafluoro-2-propanolato-κO)- (CA INDEX NAME)

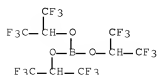


IT 6919-80-8

RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant for preparation of thallium salt of polyfluoroalkoxide complex for use as salt-in-polymer electrolyte)

RN 6919-80-8 HCAPLUS

CN 2-Propanol, 1,1,1,3,3,3-hexafluoro-, 2,2',2''-triester with boric acid (H3BO3) (CA INDEX NAME)



IC ICM C07F001-08

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ICS C07F003-00; C07F003-06; C07F005-00; C07F005-02; C07F005-06;
C07F007-00; C07F009-00; C08G079-00; H01M002-16; H01M004-60;
H01M004-62; H01M006-18

CC 78-7 (Inorganic Chemicals and Reactions)

Section cross-reference(s): 29, 36, 37, 67, 75

IT 197899-17-5P 220836-17-9P 220836-19-1P 220836-20-4P

220836-23-7P 220836-28-2P 220836-29-3P 220836-30-6P

220836-31-7P 220836-32-8P 220836-33-9P 220836-34-0P

220836-35-1P 220836-36-2P 220836-37-3P 220836-38-4P

220836-39-5P 220836-40-8P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(preparation and use in preparation of salt-in-polymer electrolytes)

IT 6919-80-8 27619-71-2 220836-24-8

RL: RCT (Reactant); RACT (Reactant or reagent)

(reactant for preparation of thallium salt of polyfluoroalkoxide complex for use as salt-in-polymer electrolyte)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 6 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 1988:115820 HCAPLUS Full-text

DOCUMENT NUMBER: 108:115820

ORIGINAL REFERENCE NO.: 108:18945a,18948a

TITLE: Matériau macromoléculaire a conduction ionique

INVENTOR(S): Muller, Daniel; Chabagno, Jean Michel

PATENT ASSIGNEE(S): Societe Nationale Elf Aquitaine (SNEA), Fr.

SOURCE: Fr. Demande, 8 pp.

CODEN: FRXXBL

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 2

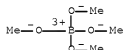
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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FR 2584868	A1	19870116	FR 1985-10737	19850712
FR 2584868	B1	19950324		
EP 213985	A1	19870311	EP 1986-401535	19860709
EP 213985	B1	19890913		
R: AT, BE, CH, DE, GB, IT, LI, LU, NL, SE				
AT 46408	T	19890915	AT 1986-401535	19860709
JP 62064073	A	19870320	JP 1986-162925	19860710
JP 07089496	B	19950927		
US 4914161	A	19900403	US 1986-884604	19860711
CA 1308859	C	19921013	CA 1986-513621	198607

PRIORITY APPLN. INFO.:	FR 1985-10737	A	11 198507 12
	FR 1985-18352	A	198512 11
	EP 1986-401535	A	198607 09

AB The ionically conductive material contains ≥ 1 ethoxylated salt dissolved in a macromol. material which has an amorphous polyether-type structure (ethylene oxide homopolymer or copolymer); the salt is RQM where M = alkali metal, especially Li, R = polyether-type structure, and Q = a functional group such as alcoholate, sulfonate, SO₄²⁻, PO₄³⁻, phosphonate, amide, and carboxylate. A Li-Mo oxide battery with an electrolyte of ethylene oxide-methylglycidyl ether solvating polymer and triethoxymethyl ether lithium trifluoroborate salt (20%) was discharged for 25 h to 1 V at 125 μ A/cm² and 30°, vs. 8 h for a similar battery with copolymer-LiClO₄ electrolyte.

IT 15841-16-4
RL: USES (Uses)
(electrolytes containing, with solvating ethylene oxide
homopolymer or copolymer, in lithium batteries)
RN 15841-16-4 HCAPLUS
CN Borate(1-), tetramethoxy- (8CI, 9CI) (CA INDEX NAME)



IC ICM H01M004-60
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 76
IT 7791-03-9 14283-07-9 15841-16-4 19402-66-5
20246-63-3 51323-41-2 113151-63-6 113151-68-1 113316-37-3
113316-38-4 113444-27-2
RL: USES (Uses)
(electrolytes containing, with solvating ethylene oxide
homopolymer or copolymer, in lithium batteries)

L14 ANSWER 7 OF 7 HCAPLUS COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 1965:469137 HCAPLUS Full-text
DOCUMENT NUMBER: 63:69137
ORIGINAL REFERENCE NO.: 63:12678g-h,12679a
TITLE: The reaction of aluminum electrodes with a glycol borate electrolyte
AUTHOR(S): Alwitt, Robert S.; Hills, Reginald G.
CORPORATE SOURCE: Sprague Elec. Co., North Adams, MA
SOURCE: Journal of the Electrochemical Society (1965), 112(10), 974-81
CODEN: JES0AN; ISSN: 0013-4651
DOCUMENT TYPE: Journal

LANGUAGE: English

AB Foil electrodes used in Al electrolytic capacitors are attacked by glycol borate electrolytes at elevated temps. In the work described in this paper it appeared that the dissoln. rate was controlled by a reaction step involving OH- and possibly H2O, but dissoln. proceeded to a significant extent only because the dissolved Al was present as a soluble borate complex. The kinetics of electrode attack was studied by means of capacitance and weight change. Cathode foil (not anodized) dissolved at a constant rate and a film of amorphous, nonbarrier oxide was formed. Anodic Al2O3 initially dissolved at an approx. constant rate independent of oxide thickness, but at longer times the rate decreased and there was a dependence on thickness. Capacitance and weight loss data correlated as if uniform dissoln. were the sole process, despite the fact that electron micrographs showed that the oxide had been penetrated at flaws. The anodizing electrolyte was found to affect the kinetics of dissoln., with and without an applied potential.

IT 11098-42-3, Ethylene glycol, borate

(Al electrode corrosion by)

RN 11098-42-3 HCAPLUS

CN 1,2-Ethanediol, ester with boric acid (H3BO3) (9CI) (CA INDEX NAME)

CM 1

CRN 10043-35-3

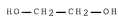
CMF B H3 O3



CM 2

CRN 107-21-1

CMF C2 H6 O2



CC 15 (Electrochemistry)

IT 11098-42-3, Ethylene glycol, borate

(Al electrode corrosion by)

=> => d ibib abs hitstr hitind 116 1-3

L16 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:430508 HCAPLUS Full-text

DOCUMENT NUMBER: 141:9609

TITLE: Lithium secondary battery

INVENTOR(S): Okumura, Takefumi; Nishimura, Shin; Iwayasu,

Norio; Yokoyama, Shoichi; Yabe, Takeshi

PATENT ASSIGNEE(S): Japan

SOURCE: U.S. Pat. Appl. Publ., 14 pp., Cont.-in-part of

U.S. Ser. No. 623,497.

CODEN: USXXCO

DOCUMENT TYPE: Patent

August 15, 2008

10/717,646

14

LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20040101759	A1	20040527	US 2003-717646	20031121
US 20040101758	A1	20040527	US 2003-623497	20030722
PRIORITY APPLN. INFO.:			JP 2002-337790	A 20021121
			US 2003-623497	A2 20030722

AB The object of the present invention is to provide a lithium secondary battery of high output. According to the present invention, there is provided a lithium secondary battery having a pos. electrode and a neg. electrode which reversibly intercalate and deintercalate lithium and an electrolyte containing an ion conductive material and an electrolytic salt, where the electrolyte contains an electrolytic salt and a boron-containing compound represented by the following formula $Z1(AO)mOB(O(AO)nZ2)O(AO)pZ3$ where, B is boron atom, Z1, Z2, and Z3 are the organic groups having an acryloyl group or a methacryloyl group; AO represents an oxyalkylene group of C1-6 and comprises one, or two or more of the oxyalkylene groups; and m, n and p each represents an average degree of polymerization of the oxyalkylene group and are >0 and <4 provided that $m+n+p \geq 1$.

IT 693782-27-3P 693782-28-4P 693782-29-5P
 693782-30-8P 693782-31-9P 693782-32-0P
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
 (lithium secondary battery)
 RN 693782-27-3 HCAPLUS
 CN Boric acid (H3BO3), 4-[4-(4-methoxybutoxy)butoxy]butyl
 4-[4-[(2-methyl-1-oxo-2-propenyl)oxy]butoxy]butyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 693782-26-2

CMF C13 H28 O4

$$H=O-(CH_2)_4-O-(CH_2)_4-O-(CH_2)_4-OH$$

CM 2

CRN 78972-17-5

CMF C12 H22 O4



CM 3

CRN 10043-35-3

CMF B H3 O3



RN 693782-28-4 HCAPLUS

CN Boric acid (H3BO3), 2-[2-(2-methoxyethoxy)ethoxy]ethyl
 2-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]ethyl ester (9CI) (CA
 INDEX NAME)

CM 1

CRN 10043-35-3

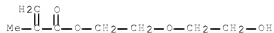
CMF B H3 O3



CM 2

CRN 2351-43-1

CMF C8 H14 O4



CM 3

CRN 112-35-6

CMF C7 H16 O4



RN 693782-29-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 4-(4-hydroxybutoxy)butyl ester, ester
 with boric acid (H3BO3) 4-[4-(4-methoxybutoxy)butoxy]butyl ester,

homopolymer (9CI) (CA INDEX NAME)

CM 1

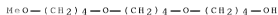
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CMF C13 H28 O4 . x C12 H22 O4 . x B H3 O3

CM 2

CRN 693782-26-2

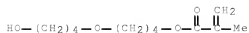
CMF C13 H28 O4



CM 3

CRN 78972-17-5

CMF C12 H22 O4



CM 4

CRN 10043-35-3

CMF B H3 O3



RN 693782-30-8 HCAPLUS

CN Boric acid (H3BO3), 3-[3-(3-methoxypropoxy)propoxy]propyl
 3-[3-[(2-methyl-1-oxo-2-propenyl)oxy]propoxy]propyl ester (9CI) (CA
 INDEX NAME)

CM 1

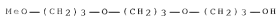
CRN 78972-16-4

CMF C10 H18 O4



CM 2

CRN 13133-29-4
CMF C10 H22 O4



CM 3

CRN 10043-35-3
CMF B H3 O3



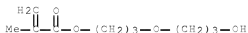
RN 693782-31-9 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 3-(3-hydroxypropoxy)propyl ester, ester with boric acid (H3BO3) 3-[3-(3-methoxypropoxy)propoxy]propyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 693782-30-8
CMF C10 H22 O4 . x C10 H18 O4 . x B H3 O3

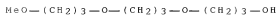
CM 2

CRN 78972-16-4
CMF C10 H18 O4



CM 3

CRN 13133-29-4
CMF C10 H22 O4



CM 4

CRN 10043-35-3
CMF B H3 O3



RN 693782-32-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester, ester with boric acid (H3BO3) 2-[2-(2-methoxyethoxy)ethoxy]ethyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 693782-28-4

CMF C8 H14 O4 . x C7 H16 O4 . x B H3 O3

CM 2

CRN 10043-35-3

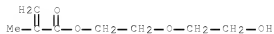
CMF B H3 O3



CM 3

CRN 2351-43-1

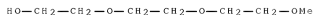
CMF C8 H14 O4



CM 4

CRN 112-35-6

CMF C7 H16 O4



IC ICM H01M010-40

INCL 429306000; 429317000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

IT 693782-27-3P 693782-28-4P 693782-29-5P
693782-30-8P 693782-31-9P 693782-32-0P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(lithium secondary battery)

L16 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 2004:430507 HCAPLUS Full-text
 DOCUMENT NUMBER: 141:9608
 TITLE: Lithium secondary battery
 INVENTOR(S): Okumura, Takefumi; Nishimura, Shin; Iwayasu,
 Norio; Yokoyama, Shoichi; Yabe, Takeshi
 PATENT ASSIGNEE(S): Japan
 SOURCE: U.S. Pat. Appl. Publ., 14 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 2
 PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
US 20040101758	A1	20040527	US 2003-623497	200307 22
FR 2847721	A1	20040528	FR 2003-13581	200311 20
FR 2847721	B1	20060804		
KR 2004045326	A	20040601	KR 2003-82489	200311 20
CN 1503398	A	20040609	CN 2003-10118013	200311 20
US 20040101759	A1	20040527	US 2003-717646	200311 21
JP 2004186150	A	20040702	JP 2003-391808	200311 21
PRIORITY APPLN. INFO.:			JP 2002-337790	A 200211 21
			US 2003-623497	A2 200307 22

AB The object of the present invention is to provide a lithium secondary battery of high output. According to the present invention, there is provided a lithium secondary battery having a pos. electrode and a neg. electrode which reversibly intercalate and deintercalate lithium and an electrolyte containing an ion conductive material and an electrolytic salt, where the electrolyte contains an electrolytic salt and a boron-containing compound represented by the formula $Z1(AO)mOB(O(AO)nZ2)O(AO)pZ3$ or a polymer thereof (where B is a boron atom; Z1, Z2, and Z3 are organic groups having an acryloyl group or a methacryloyl group; AO represents an oxyalkylene group of C1-6 and comprises one or two or more of the oxyalkylene groups; and m, n and p each represent an average degree of polymerization of the oxyalkylene group and are 0-4).

IT 693782-27-3P 693782-28-4P 693782-29-5P
 693782-30-8P 693782-31-9P 693782-32-0P
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(lithium secondary battery)

RN 693782-27-3 HCAPLUS

CN Boric acid (H3BO3), 4-[4-(4-methoxybutoxy)butoxy]butyl
 4-[4-[(2-methyl-1-oxo-2-propenyl)oxy]butoxy]butyl ester (9CI) (CA
 INDEX NAME)

CM 1

CRN 693782-26-2

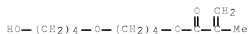
CMF C13 H28 O4



CM 2

CRN 78972-17-5

CMF C12 H22 O4



CM 3

CRN 10043-35-3

CMF B H3 O3



RN 693782-28-4 HCAPLUS

CN Boric acid (H3BO3), 2-[2-(2-methoxyethoxy)ethoxy]ethyl
 2-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]ethyl ester (9CI) (CA
 INDEX NAME)

CM 1

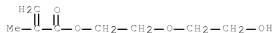
CRN 10043-35-3

CMF B H3 O3



CM 2

CRN 2351-43-1
CMF C8 H14 O4



CM 3

CRN 112-35-6
CMF C7 H16 O4



RN 693782-29-5 HCAPLUS

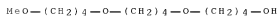
CN 2-Propenoic acid, 2-methyl-, 4-(4-hydroxybutoxy)butyl ester, ester with boric acid (H3BO3) 4-[4-(4-methoxybutoxy)butoxy]butyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 693782-27-3
CMF C13 H28 O4 . x C12 H22 O4 . x B H3 O3

CM 2

CRN 693782-26-2
CMF C13 H28 O4



CM 3

CRN 78972-17-5
CMF C12 H22 O4



CM 4

CRN 10043-35-3
CMF B H3 O3



RN 693782-30-8 HCAPLUS

CN Boric acid (H3BO3), 3-[3-(3-methoxypropoxy)propoxy]propyl
3-[3-[(2-methyl-1-oxo-2-propenyl)oxy]propoxy]propyl ester (9CI) (CA
INDEX NAME)

CM 1

CRN 78972-16-4

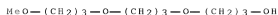
CMF C10 H18 O4



CM 2

CRN 13133-29-4

CMF C10 H22 O4



CM 3

CRN 10043-35-3

CMF B H3 O3



RN 693782-31-9 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 3-(3-hydroxypropoxy)propyl ester, ester
with boric acid (H3BO3) 3-[3-(3-methoxypropoxy)propoxy]propyl ester,
homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 693782-30-8

CMF C10 H22 O4 . x C10 H18 O4 . x B H3 O3

CM 2

CRN 78972-16-4

CMF C10 H18 O4



CM 3

CRN 13133-29-4

CMF C10 H22 O4



CM 4

CRN 10043-35-3

CMF B H3 O3



RN 693782-32-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester, ester with boric acid (H3BO3) 2-[2-(2-methoxyethoxy)ethoxy]ethyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 693782-28-4

CMF C8 H14 O4 . x C7 H16 O4 . x B H3 O3

CM 2

CRN 10043-35-3

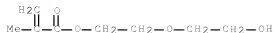
CMF B H3 O3



CM 3

CRN 2351-43-1

CMF C8 H14 O4



CM 4

CRN 112-35-6

CMF C7 H16 O4



IC ICM H01M010-40

INCL 429306000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

IT 693782-27-3P 693782-28-4P 693782-29-5P

693782-30-6P 693782-31-9P 693782-32-0P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP

(Preparation); USES (Uses)

(lithium secondary battery)

L16 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:427714 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 141:9606

TITLE: Boron-containing compound, ion-conductive polymer and polyelectrolyte for electrochemical devices

INVENTOR(S): Okumura, Takefumi; Nishimura, Shin; Iwayasu, Norio; Yokoyama, Shoichi; Yabe, Takeshi

PATENT ASSIGNEE(S): Hitachi, Ltd., Japan; NOF Corporation

SOURCE: Eur. Pat. Appl., 25 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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EP 1422781	A1	20040526	EP 2003-26140	20031113
				R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
TW 244787	B	20051201	TW 2003-92131678	20031112
JP 2004182982	A	20040702	JP 2003-389159	20031119
KR 2004045322	A	20040601	KR 2003-82461	20031120

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CN 1502644	A	20040609	CN 2003-10118012	200311 20
US 20040147697	A1	20040729	US 2003-717645	200311 21
US 7230057	B2	20070612		
PRIORITY APPLN. INFO.:			JP 2002-337789	A 200211 21
			EP 2003-13841	A 200306 18

OTHER SOURCE(S): MARPAT 141:9606

AB An object of the present invention is to provide a boron-containing compound capable of forming an ion-conductive polyelectrolyte having high ion-conductive properties, and a polymer of the compound. According to the present invention, there are provided a polymerizable boron-containing compound of formula $Z1(AO)pOB(O(AO)mZ2)O(AO)nZ3$ [where B is boron atom; Z1, Z2, and Z3 are organic groups having an acryloyl or methacryloyl group; AOs are independently an oxyalkylene group of C1-6 and are of one or more kinds; and m, n and p are independently an average number of moles of the oxyalkylene group(s) added of <4 and >0, provided that $m+n+p \geq 1$] a polymer thereof, a polymer of a compound of formula $Z4(AO)p1OB(O(AO)m1Z5)O(AO)n1Z6$ and a compound of formula $R1(AO)p2OB(O(AO)m2R2)O(AO)n2R3$ [where Z4, Z5, and Z6 is an organic group having an acryloyl or methacryloyl group; R1, R2 and R3 are independently a hydrocarbon group of C1-10; AOs are independently an oxyalkylene group of C1-6 and are of one or more kinds; and m1, n1, p1, m2, n2, and p2 are independently an average no. of moles of the oxyalkylene group(s) added of <4 and >0, provided that each of the sum of $m1+n1+p1$ and the sum of $m2+n2+p3 \geq 1$] and a polyelectrolyte for electrochem. device comprising either of these polymers and at least one electrolyte salt:.

IT 693782-27-3P 693782-28-4P 693782-29-5P
693782-30-8P 693782-31-9P 693782-32-0P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(boron-containing compound, ion-conductive polymer and polyelectrolyte for electrochem. devices)

RN 693782-27-3 HCAPLUS

CN Boric acid (H3BO3), 4-[4-(4-methoxybutoxy)butoxy]butyl
4-[4-[(2-methyl-1-oxo-2-propenyl)oxy]butoxy]butyl ester (9CI) (CA
INDEX NAME)

CM 1

CRN 693782-26-2

CMF C13 H28 O4

H=O—(CH2)4—O—(CH2)4—O—(CH2)4—OH

CM 2

CRN 78972-17-5

CMF C12 H22 O4



CM 3

CRN 10043-35-3

CMF B H3 O3



RN 693782-28-4 HCAPLUS

CN Boric acid (H3BO3), 2-[2-(2-methoxyethoxy)ethoxy]ethyl
 2-[2-[(2-methyl-1-oxo-2-propenyl)oxy]ethoxy]ethyl ester (9CI) (CA
 INDEX NAME)

CM 1

CRN 10043-35-3

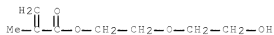
CMF B H3 O3



CM 2

CRN 2351-43-1

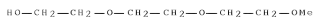
CMF C8 H14 O4



CM 3

CRN 112-35-6

CMF C7 H16 O4



RN 693782-29-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 4-(4-hydroxybutoxy)butyl ester, ester with boric acid (H3BO3) 4-[4-(4-methoxybutoxy)butoxy]butyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

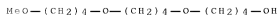
CRN 693782-27-3

CMF C13 H28 O4 . x C12 H22 O4 . x B H3 O3

CM 2

CRN 693782-26-2

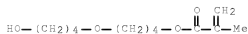
CMF C13 H28 O4



CM 3

CRN 78972-17-5

CMF C12 H22 O4



CM 4

CRN 10043-35-3

CMF B H3 O3



RN 693782-30-8 HCAPLUS

CN Boric acid (H3BO3), 3-[3-(3-methoxypropoxy)propoxy]propyl 3-[3-[(2-methyl-1-oxo-2-propenyl)oxy]propoxy]propyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 78972-16-4

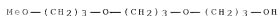
CMF C10 H18 O4



CM 2

CRN 13133-29-4

CMF C10 H22 O4



CM 3

CRN 10043-35-3

CMF B H3 O3



RN 693782-31-9 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 3-(3-hydroxypropoxy)propyl ester, ester with boric acid (H3BO3) 3-[3-(3-methoxypropoxy)propoxy]propyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

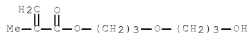
CRN 693782-30-8

CMF C10 H22 O4 . x C10 H18 O4 . x B H3 O3

CM 2

CRN 78972-16-4

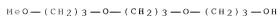
CMF C10 H18 O4



CM 3

CRN 13133-29-4

CMF C10 H22 O4



CM 4

CRN 10043-35-3
CMF B H3 O3



RN 693782-32-0 HCAPLUS
CN 2-Propenoic acid, 2-methyl-, 2-(2-hydroxyethoxy)ethyl ester, ester with boric acid (H3BO3) 2-[2-(2-methoxyethoxy)ethoxy]ethyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 693782-28-4
CMF C8 H14 O4 . x C7 H16 O4 . x B H3 O3

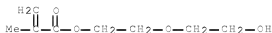
CM 2

CRN 10043-35-3
CMF B H3 O3



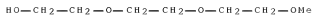
CM 3

CRN 2351-43-1
CMF C8 H14 O4



CM 4

CRN 112-35-6
CMF C7 H16 O4



IC ICM H01M010-40
ICS H01B001-12; C07F005-04; C08G065-00; C08L071-00
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 76
IT 693782-27-2P 693782-28-4P 693782-29-5P
693782-30-8P 693782-31-9P 693782-32-0P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(boron-containing compound, ion-conductive polymer and polyelectrolyte
for electrochem. devices)

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